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ABSTRACT

This paper presents (1) a case for the establishment of a national resource center in developing countries to train vocational trainers and to provide a place for further research in these areas and (2) guidelines for the development and operation of such a facility. The paper is organized in 12 sections. After three sections that establish a need for a national resource center, information on establishing and operating such a facility is provided in the following eight sections: (1) description of the Philippines National Resource Center; (2) users and target groups; (3) production of learning materials; (4) provision of consulting services; (5) the institutional framework of the center--options for establishing the center as a separate entity or as part of an attached agency; (6) management of a center, including budget, planning, staff, premises, and equipment; (7) international and regional cooperation; and (8) evaluation. The final section concludes the case for a center as needed for industrial development and states that a center should use the indigenous resources and existing facilities of each country to the maximum. (KC)

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REGIONAL WORKSHOP

ON

TECHNICAL/VOCATIONAL TEACHER TRAINING

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Resource Paper

REGIONAL WORKSHOP ON TECHNICAL/VOCATIONAL TEACHER TRAINING

NATIONAL RESOURCE CENTER (NRC)

JOSE D. LACSON

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National Resource Center (NRC)
Jose D. Lacson

I. BACKGROUND

1. It has been recognized in many developed countries that a life-long training approach is necessary to constantly upgrade and update the technical knowledge and skills of workers not only to keep pace with technological developments and increase productivity but to enrich the occupational life and work satisfaction of workers. In view of this, the promotion and scientific conduct of vocational training and research is important to meet the diverse needs of workers for an improved skills training program.

2. In the same manner, the trainers 1/, who act as catalyst in the learning process, have to be continually updated with the latest technological developments in their respective field of specialization. Likewise, the pedagogical techniques of instructors have to be improved to increase their efficiency and effectiveness by taking into account the educational technology which has evolved to increase the effectiveness of teaching-learning process. An evolutionary education and training should be a national concern to optimize the multiplier effect of trainers training.

3. Several approaches have been developed to increase the pedagogical and technical skills of instructors. First is the trainers training program which relates to the direct training of trainers and to the training of personnel responsible for management, administration, design and conduct of training of trainers. Secondly, the Work Experience program is a system specifically designed to provide trainers work with industry for a short period during the year which allows them to upgrade their curriculum and provide better quality of training. This program which is a mandatory requirement in some vocational institutions in the United States requires trainers to work as technicians in industry during the summer months.

4. Development trends in trainers training includes the DACUM approach, competency-based training strategy and distance education training programs, among others. In the field of training technology, new approaches that have been developed which includes Computer-Assisted Instruction (CAI) and informatics. CAI offers an adaptive and interactive learning environment that allows an optimum individualized training situation. Informatics, on the other hand, is a relatively new electronic area which has the capability to store and transmit large quantities of information by satellite.

5. Information on the developments and trends in trainers-training is substantial and have to be accessible to trainers to increase their awareness of new approaches that could significantly improve the delivery of their service. Information which plays an important part in economic and social development, including education is likewise vital to the development of a sound training technology.

1/ The trainers at NMYC is one who is involve in training and training relted activities, e.g., direct trainers, those involve in curriculum development, skills standards development, evaluation of training, etc. and those involved in the management of training.

6. Inadequacy of training material facilities, the isolation of specialists, researchers, the difficulty of obtaining this situation and constitute an obstacle to the development of education. Similarly, a reproduction/work room where trainers can develop their curricula and training aids as well as practice the use of software with various hardwares is deemed necessary for the continual development of trainers.

7. Facilities which are currently existing or which are likely to become available in the near future includes, among others, the establishment of a centralized national institute, attachment of a facility for trainers training to an existing institute, establishment of regional centers, provision of a national resource center and regional resource centers in existing institutes. These facilities were conceived to optimize the use of human and material resources available in the country by providing a coordinated and coherent approach to the development of trainers.

8. A national institute on trainers training assumes the responsibility of research and development in the field of curriculum and training aids development, professionalization of trainers and coordination and conduct of training activities. On the other, National Resource Center provides an environment wherein trainers can continally develop and update their teaching skills. This is a significant development in view of the limited number of training programs available to an individual trainer and vast information and knowledge that trainer has to acquire.

II. Assumptions

9. A number of assumptions in the development of a National Resource Center have to be stated on the outset. These are:

(i) a continuous development of trainors is vital to their professional development and to the improvement of vocational training

(ii) although trainors training programs and other approaches are tasked with the development of trainers, these are insufficient and sporadic compared with the developments and innovation in this field

(iii) trainers training to be cost-effective must be dynamic, evolving and innovative. These can be achieved through application of what have been learned

(iv) a continuous flow of information is important to be able to keep track of technical innovations and to serve as basis for development of resource materials

(v) a National Resource Center which will provide library services and work room for applied research in the field of trainers training is advantageous to the development of trainors in particular and vocational training in general

(vi) the NRC shall also contribute to the information flow on trainer training innovations and experiences at the regional and international level

10. An evaluation of the effectiveness of the Center in providing its services to its target clientele would in effect justify or dispute the above-mentioned assumptions.

III. Description of the National Resource Center (NRC)

11. One of the most important facilities required by a trainer training institute, and one which is not normally found in a "general" vocational training institutions, is a Resource Center which shall assist trainers to be dynamic, continuously evolving and innovating by providing an opportunity for methods development, information search and applied research. The Center shall complement and supplement the approaches applied in the development of trainers (e.g., trainer training and Work Experience Program) by filling the gaps which were not covered or inadequately covered by the trainers training program and providing a continuity in the professional development of trainers.

12. Specifically, the functional concern of the National Resource Center (NRC) shall include:

(i) provision of adequate facilities and materials for trainors practice in the local production of training software and sector-relted training aids;

(ii) documentation and information control of training materials and sector-related training aids at national, regional and international level;

(iii) dissemination of training information and materials relevant to the needs of members of the academic community and practitioners of vocational education;

(iv) establishment and maintenance of an information network at the national, regional and international levels; and

(v) provision of consulting services in the area of application of new training techniques and training software development.

IV. Users and Target Groups

13. The NRC shall render service to the following categories of users, namely: program administrators, trainer training institutions, curriculum developers, and research workers, trainers, national, regional and international institutions.

14. The program administrator whose main concern is to plan and evaluate programs within the goals set by policy makers need information on cost-effective schemes and innovations as well as experiences of local and foreign institutions with the use of these approaches. Likewise, reports and recommendations of seminars, workshops and conferences provide vital information in planning and evaluating trainers-training programs.

15. Trainer training institutions, curriculum developers and individual research workers require vast information and documentation in the conduct of their work. Information requirements of this group of clientele is not limited to local materials but also includes international and foreign publications.

16. The trainers who are the main clientele of the resource center shall not only benefit from the information holdings of the Center for their professional development but also on the opportunity to practice production of training softwares. Advisers on the application of training techniques would also be available to assist the trainer in their work.

17. Information requirements of trainers includes teaching methods and pedagogical techniques, instrucctional materials, technological developments in their respective field of specialization and more general works on policies, status of administration and code of discipline in their country.

18. Lastly, international and regional institutions shall similarly benefit from the Center, as the Center would form part of the network for exchange of information.

V. Information Center (see attached project proposal)

19. The Information Center of the National Resource Center can be differentiated from other documentation and information centers and/or library in terms of learning modes and facilities available. This considers the difference among individuals in the modes that would effectively facilitate the learning process. Similarly the types of knowledge and skills that have to be acquired influence the kind of learning facilities that have to be utilized. Broadly, the data base of the Information Center can be classified into printed (paper-based) and audio-visual materials.

20. Printed materials that have to be acquisitioned includes books, pamphlets, periodicals, documents, research findings and reports on trainer training and related fields, seminars, workshops and conference materials, curriculum and learning materials, case studies and learning exercises. More general materials on library science, documentation techniques, psychology, among others, may be included. Audio-visual materials on the field of trainers training can utilize the record player, tape recorders, projectors, video-tape equipment and computer facilities. Local and foreign sources can be tapped, although the magnitutde of the documents acquired from abroad is dependent on the specific needs of the clientele.

21. Thus prior to the establishment of the NRC, specifically the Information Center, a survey on information needs must be conducted to identify priorities in the acquisition of materials. An important feature of this Center is the establishment and maintenance of a networking to ensure a mechanism for information exchange. Coordination with institutions concerned with trainers training and vocational training can provide access to information materials on the subject area.

22. Four main functions of the Information Center would include collection, processing, dissemination of documents and materials and instruction/advice on the utilization of the available facilities.

23. Acquisition and maintenance of data base can be conducted through purchase, requests/solicitation and exchange. Purchase is a simple operatin which is constrained by the financial resources of the Center. Solicitations and requests from other institutions and agencies provide a less costly alternative. On the other hand, exchange of materials is feasible only when the Information Center has obtained substantial holdings. A comprehensive collection of relevant materials should be aimed by the Information Center.

24. Printed documents can be maintained either in its original form, micro-film, micro-fische, or reproduced using reproduction techniques.

25. Documentation involves catalogue and classification of printed and audio-visual materials. Since training packages consist of both types of materials, the assembly of related but separately stored materials can be facilitated by efficient indexing and cross references. To effectively control and promote efficiency, the use of an authorized list of index terms (Thesaurus) by an Information Center is advocated. The Thesaurus would facilitate classification by its classification code. It also stress equal importance on retrieval of documents.

26. The availability of printed and audio-visual materials necessitates the provision of adequate spaces and rooms wherein library users can use the audio-visual materials without distracting the others. This may include sound insulated booths wired for projectors and recorders.

27. Dissemination to actual users entails the setting of mailing list consisting of vocational training centers and trainers within the country. Brochures and leaflets describing the aims, activity and services of the National Resource Center can be sent to the clientele of the Center as a first step on marketing its services. Publications such as newsletters, bulletins, journals can similarly be distributed as part of the services the Center can render.

28. Lastly, advice and instruction in the utilization of the facilities available would require trained personnel with an insight of a librarian, knowledge of an educationalist and a personality that could establish good relationships. An intrinsic understanding of the purpose of the Center is essential. A good gauge of the effectiveness of the service rendered by NRC will be the ability of its staff to provide adequate advices that could facilitate the learning process.

VI. Production of Learning Materials

29. Although the Center itself does not conduct research and development activities, the Center provides facilities, equipment and advisory services that would allow a trainer to produce learning and audio-visual materials.

30. A paper prepared by the International Center for Advanced Technical and Vocational Training in Turin, Italy discusses the physical provision of a Learning Resource Center. "The physical provision of a learning place in which a Resource Center plays its part will include the usual classrooms, seminar rooms, tutorial rooms and so on, but these will be designed to permit the fullest exploitation of the learning media and assistance which the Center provides. Seminar rooms, for example, might well be designed with a fifth sloping wall to act as an overhead projector screen; they will have ample electric socket outlets and possibly a video link with the television studio and possibly a mobile television van, a media store, a media and repographic preparation area and a maintenance section."

31. Provision for computer facilities has to be made particularly among countries who are currently or planning to adapt the computer assisted learning and computer assisted design technology.

32. The degree of sophistication of resource center would definitely differ from one country to another depending on the extent of the services they wish to offer, the current or projected level of technology applied in vocational training and resources available in the country or from aid-giving countries or even from networking centers.

33. The provision of facilities for trainers practice in production of training softwares necessitates the maintenance and continual updating of equipment in line with level of technology applied in vocational training institutions and industries. The relevance of the Center hinges on this since whatever is learned from this Center should complement the trainers activities in the actual workplace.

34. The availability of support staff who are tasked with the maintenance and review of the adequacy and appropriateness of the available facilities is an area of utmost concern. Likewise, the manager of the center should be well versed with the needs and current practices in vocational training, in general and trainers training, in particular to be able to accurately plan the programs and projects of the Center.

VII. Provision of Consulting Services

35. The provision of advisory servies is on two levels, namely, on the selection of learning modes and facilities appropriate to the learning activities and on the production of training softwares. These two levels require specialists wtih different areas of expertise.

36. In the first level, as mentioned earlier, specialists need to be an educationalist with training on library science. On the other hand, the second type of specialist would require knowledge in curriculum development, preparation of audio-visual materials, selection of media for training purposes, preparation of exercises, case studies, test materials and application of training techniques and methods. Work experience as trainer is required; familiarity with training situations and problems would enhance the coaching and advisory process. The staff likewise needs continuous training and updating on current practices and developments in the area of trainers-training. The strength of the Center does not only depend on the facilities available but on the competence of its management and support staff.

VIII. Institutional Framework

37. Two alternatives are open to any country who plans to establish a National Resource Center, namely, to establish this center as separate entity or attached to an existing institutions or organization. The selection of framework to be adopted would largely be determined by the human and material resources, availability and capability of institutions to which the NRC is envisioned to be attached and political reasons.

A. Separate Entity

38. Several options are still open to any country, however, only two alternatives will be presented in this paper.

39. Firstly, the NRC can be established as a foundation wherein the membership shall be composed of trainers, training and vocational research institutions. The governing body (Board of Trustees) of the Foundation shall be composed of representatives from the above-mentioned groups. This organization shall be self-sustaining and income generating although the revenues generated will be kept at a minimum amount. The governing body which is tasked with policy-making shall be supported by a secretariat which will be responsible for the operation of the Center. The purpose, structure, coverage and/or scope as well as capitalization or sourcing of funds shall be first identified and defined prior to the registration and operationalization of the Center.

40. Secondly, the Center can be established as a government agency tasked with public services for the development of trainers. Funds for the establishment of the Center can either come from aid-giving donor countries or from the Government Budget while the maintenance and operating expenses shall come fr[illegible]he appropriations of the National Budget. A national committee respon[illegible]le for policy-making can also be established to forge a strong coordination between the Center and its end-users.

B. Attached Agency

41. The basic principles that need to be applied in determining the specific organization or institution to which the Center shall be attached is the commitment of the institutions to the development of trainers, physical provisions (i.e., equipment, space), availability of staff specialized in trainers development, and reputation of the institution. Again, several alternatives are open to any country. The Center can be attached to a trainer-training institution, vocational education institution or vocational research institution. As an attached agency, material and human resources required by the institute shall come from the mother agency.

42. The framework of institution in which the Center will have to operate has to be determined in advance by weighing the merits and demerits of each of the alternatives.

43. Whatever alternative the country adopts, it has an additional option to establish Regional Resource Centers. Regional Centers, though on a smaller scale, provides the same services as the National Center. This approach enhances the accessibility of the Center to its end-users. Criteria that can be used in choosing an appropriate location are accessibility and concentration of vocational and trainer training institutions.

IX. Management of Center

44. In order for the National Resource Center to be established several aspects in the development stage have to be considered. To eliminate possible constraints and maintain the fluent flow of developmental processes the following are suggested for comprehensive studies:

A. Budget

45. The National Resource Center (NRC) on Technical and Vocational Education should be entitled to a separate budget, and should have its own workplan and development plan. It is better not to undertake the creation of NRC unless sufficient funds, spcae or trained personnel are available for its development. This seems to be laboring the obvious, but experience has shown, particularly in a number of developing countries, that when these conditions are not met from the outset, the Center is doomed to failure, or at least to remain in a primitive stage.

46. The most important and the most difficult part is to secure an adequate budget for the Center. If the Center is government-attached institution, it is essential to ensure that the financing of the Center is included as a fixed item in the national budget, and the financial commitments entered into are on a long term basis. As regards the allocation of resources, as a general rule, I agree with the suggestion put forward in the Unesco publication (Guide on the Organization and the Operation of Documentation and Information Centers and Services for Technical and Vocational Education) that about two-thirds of the expenditure should be devoted to staff and one-third to expenditure on material.

B. Planning the Work

47. The step by step development of the center will be greatly facilitated by the establishment of a work-plan, prepared for each budgetary year. The work-plan should not be a detailed document; it is conceived rather in the form of a checklist of activities, established in priority order, and structured according to the set objectives of the Center. The work-plan should contain the necessary data for each activity, grouped in order of priority under the main functions (e.g. documentation of training materials, provision of services in training design, etc.). Each entry will contain a short description of the activity, the name of the staff, member responsible for carrying it out, the deadline set for the completion of the activity, and the estimated cost, when necessary.

48. The work-plan should permit periodic control and evaluation of the work completed and of the rate of implementation of the progress throughout the budgetary year.

C. Staff

49. In order to implement its program, the Center needs adequately trained personnel. The size of the staff and the qualifications required depends on the size of its operation as well as the services it will be rendering. The human resources envisioned to operate the Center must be settled before actual operation begins.

50. As discussed previously the Center is suggested to have specialists and/or educationalists, documentalists, librarians, reprographics staff, media resources officers, and other support staff. These human resources have to undergo adequate training in their field of specialization in order to perform the set workplan as well as to implement effectively and efficiently the Center's function.

D. Premises and Equipment

51. In order to carry out efficiently the tasks entrusted to it, it is essential for the center to have adequate premises. A clear allocation of the space available for the National Resource Center should be made in accordance with a functional plan.

52. The Center needs to be equipped with all the equipment necessary to provide adequate and relevant services. A detailed and comprehensive study of equpment and facilities has to be done during the developmental stage of the project. Similarly, this list should be continuously reviewed. Budgetary allocation for purchase of new equipments and facilities and their maintenance has to be provided annually.

X. International and Regional Cooperation

53. Parallel to its development on the national scene, the center will also have to participate in the international and regional programs designed to promote the flow of information between countries. It will

have to form a part of the projected international network and thus benefit from the experiences of other developing countries who had to face comparable problems. Similarly, the experience gained at the national level by the Center can also, through international and regional bodies be made known shared with other countries.

XI. Evaluation

54. A process and an impact evaluation can be utilized to assess the performance of the NRC. Process evaluation is an internal management tool designed as a control device to identify and correct deviations by comparing actual inputs to, and delivery of the service vis-a-vis established standards. This necessitates the identification of standards in terms of quality and quantity with respect to the collection of materials of the information center, the equipment and facilities for the work room and qualifications of the specialists providing advisory services in the center. Through constant monitoring the director of the center would easily be able to determine whether the information holdings of the library are relevant to the needs of the Center's clientele, whether the equipment facilities available in the center is at par with those used in the actual workplace and whether the specialists and staff of the center would require additional training.

55. On the other hand, impact evaluation provides information to program and policy makers on the following: 1) Achievement of the Centers stated goals; 2) Conditions under which the project is most effective or ineffective; 3) Effects attributed to the program; and 4) Unanticipated effect of the project. Generally, impact evaluation is conducted after preset gestation period (gestatin period commences at the termination of the program). However, even if the NRC provides a continuing services, an assessment could be made after a predetermined number of years (e.g. 3 years) to evaluate th impact of the Center during those years. This would serve also as a justification for the continuous existence of the center, its termination or the modification of the project concept.

56. Some suggested parameters in the evaluation of the project's success includes:

(i) Percentage of target clientele reached and serviced;

(ii) Relevance of service rendered to the development of trainers; and

(iii) Adequacy of services rendered to trainers, research institutes and vocational training institutions.

XII. Concluding Remarks

57. This paper presented a logical framework for program planners who intends to establish a National Resource Center. However, of primary importance to policy makers in the question "What previously

should be accorded to the NRC?" This is significant in even of high financial requirement of the project, budgetary limitations faced by most countries and the numerous proposals which intends to contribute to economic development that requires funding.

58. Although education and training are just, two of the various factors that influence economic growth, it can be said that a strong vocational technical education system is a major factor contributory to the development of countries like Japan and Germany. In recognition of significant role played by trainers in the training process, their development should be upheld safeguarded.

59. With regards to the issue of financial resources, it is recommended, that sophistication should not be aimed at, instead, indegenous resources and existing facilities of each country should be utilized maximally.

PROJECT PROPOSAL

NMYC Skills Development Information and Documentation Center

I. Background and Context

1. It has been generally recognized that the development in detail of sound manpower resource development policies and plans requires a wide range of data and a constant flow of information between all the groups participating in such a process, such as policy makers, planners, research personnel, trainors, trainees, training institutions and the community at large. With this as the guiding principle, the National Manpower and Youth Council, the prime governmental entity of the Republic of the Philippines tasked with such developmental responsibility, have been in the forefront of developing such a delivery mechanism.

2. Educational information, as applied in the context of vocational and technical training, renders the availability of essential facts and figures a vital determinant in NMYC's decision-making effectiveness. Cognizant thereof, foundations have been laid at the agency level for a systematic and regular exchange of information, documentation and materials of interest obtained from operations, and research and development concerning technical and vocational education. The programs that provided the premises are the:

(i) institutionalization of a management information system (MIS). The NMYC-MIS was initiated in 1976 to monitor the performance of operating units. Data from field and central office operations are processed and disseminated to concerned management users, government offices and other researchers; and

(ii) formalization of linkage with the Asia Pacific Skills Development and Education Program (APSDEP). With this event, membership in the Asia-Pacific Skills Development Information Network (APSDIN) have been formalized through which NMYC has been made as its focal point in the Philippines. Presently, teh APSDIN Philippine Coregroup composed of seven other institutions is being coordinated by NMYC to strengthen the local network.

3. This effort addresses the following in particular:

(i) Publications concerning, among others, comparative education, psychological and pedagogical problems affecting general and technical and vocational education, and current trends;

(ii) Information and documentation concerning curriculum development methods and materials, employment opportunities including manpower requirements;

(iii) Teaching materials and equipment;

(iv) Mass media programs of an informational or pedagogical character; and

(v) Information generated internally from the agency's skills development programs.

4. Aware of its limited resources, however, NMYC realizes the difficulty in establishing such a facilitative system to support primarily the NMYC system and the cooperative effort of sharing information with local and foreign institutions. The lack of material facilities and equipment and technical expertise, the difficulty of obtaining documents/information, scanty mean of communications account mainly for this situation and constitute an obstacle to manpower resource development.